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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,220	09/24/2001	Akihiro Goto	Q65416	6650

7590 02/16/2006

Sughrue Mion Zinn
Macpeak & Seas
2100 Pennsylvania Avenue NW
Washington, DC 20037-3202

EXAMINER	
EVANS, GEOFFREY S	

ART UNIT	PAPER NUMBER
1725	

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/937,220	GOTO ET AL.	
	Examiner	Art Unit	
	Geoffrey S. Evans	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The terminal disclaimer received 20 January 2006 has been approved.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magara et al. in U.S. Patent No. 5,434,380 in view of Saito et al. in U.S. Patent No. 5,858,479. Magara et al. in U.S. Patent No. 5,434,380 discloses a control member (see element 21 in figure 9) for controlling the electric discharge unit (element 10; see column 7,lines 52-56) for supplying pulses to the gap (see figure 6) with a first pulse width section and a first peak section and also a second pulse width section and a second peak section (see figure 169b)) that meets the equation (2<=k<=n) by 2=k=n.

Since during the first pulse width section less emission of the electrode occurs, inherently this can be considered to suppress the emission of the electrode material. It is also inherent in an electric discharge process that the diameter of an electric discharge arc column is extended. Magara et al. however does not use the material in the electrode to coat the workpiece but instead uses silicon particles in the gap to create a smooth cover film. Saito et al. teaches a surface treating method by electric discharge using a green electrode of TiH_2 with a working fluid that contains carbon (see column 5,line 25) to create a hard coating layer of Ti or TiC (with a Vickers hardness of 600-900, see column 6,line 45) and excellent anti-wear characteristics, and that the TiC is made by chemical decomposition of Ti with carbon due to oil decomposition. It would have been obvious to adapt Magara et al. in view of Saito et al. to provide this to replace the silicon particles with an electrode made of TiH_2 to create a hard coating on the workpiece. The electric discharges will cause the electrode to emit detritus and particles of Ti into the machining gap.

5. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magara et al. in U.S. Patent No. 5,434,380 in view of Saito et al. in Japan Patent No. 5-148,615. Magara et al. in U.S. Patent No. 5,434,380 discloses a control member (see element 21 in figure 9) for controlling the electric discharge unit (element 10; see column 7,lines 52-56) for supplying pulses to the gap (see figure 6) with a first pulse width section and a first peak section and also a second pulse width section and a second peak section (see figure 169b)) that meets the equation (2<=k<=n) by 2=k=n. Since during the first pulse width section less emission of the electrode occurs,

inherently this can be considered to suppress the emission of the electrode material. It is also inherent in an electric discharge process that the diameter of an electric discharge arc column is extended. Magara et al. however does not use the material in the electrode to coat the workpiece but instead uses silicon particles in the gap to create a smooth cover film. Saito et al. in Japan Patent No. 5-148,615.teaches a surface treating method by electric discharge using an electrode made of hard materials such as a carbide (see paragraph 16) or sintered WC-Co (see paragraph 18) to create a hard coating on a workpiece. It would have been obvious to adapt Magara et al. in view of Saito et al. to provide this to replace the silicon particles with an electrode made of a hard material such as a carbide or sintered WC-Co to create a hard coating on the workpiece

6. Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 6:30AM to 4:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571)-272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

GSE

Geoffrey S. Evans
Primary Examiner
Group 1700